MLC 104 IP Plus Series

MediaLink® Controllers with IP Link®

MLC 104 IP Plus front view

MLC 104 IP Plus rear view

SERIES FEATURES

- **Bidirectional RS-232 port for universal display control** — The MLC 104 IP Plus has a dedicated port for communicating with virtually any projector or flat panel display via IR or RS-232. Control drivers can be downloaded or created using the intuitive software.
- **Meets or exceeds Section 508 accessibility standards**
- **IP Link® Ethernet monitoring and control** — An IP integration technology developed by Extron that enables the MLC 104 IP Plus to be controlled and proactively monitored over a LAN, WAN, or the Internet.
- **Three digital I/O ports** — Each one is configurable as a digital input or digital output and can interface with a variety of devides, such as sensors, switches, LEDs, and relays.
- **Dedicated IR output control port** — For control of IR-controllable display devices and source equipment, such as VCRs and DVD players
- **Support for optional IRCM - Infrared Control Modules** — For controlling external sources, such as DVD players and VCRs
- **IR learning capability** — For capturing IR remote codes from a device's handheld remote control
- **Discrete ON and OFF display power controls** — Simplifies system operations and eliminates the need for an external display remote.
- **RS-232 port for MediaLink Switcher support** — For controlling an optional Extron MediaLink Switcher.
- **Inactivity timer for display shutoff** — Adjustable timer controls automatic shutdown to conserve energy, prevent plasma burn-in, or extend projector lamp life.
- **Front panel security lockout** — When the security lockout mode is engaged, the MLC 104 IP Plus's front panel becomes inoperable unless a user-defined PIN number is entered. No controller functions can be activated.
- **Volume control knob with volume level indication for display or MediaLink Switcher** — Allows for convenient, centralized control without additional remotes. The five LEDs provide a clear indication of the current audio setting.
- **Configurable buttons** — Can be assigned to trigger a variety of functions such as selecting an input or sending a serial command or IR command signal.
- **Macro capability** — Any button can be configured to execute multiple actions through the serial and IR control ports. For instance, the touch of a single button could trigger commands to turn on the display, select the display's RGB input, and select an input on the MediaLink Switcher.
- **Tri-color, backlit buttons can be custom labeled for easy identification** — Buttons illuminate red, green, or amber, depending on function, for ease of use in low-light environments.
- **Pre-printed button labels included**
- **Optional SCP 104 Secondary Control Panel** — Duplicates the MLC 104 IP Plus's front panel buttons and offers a second control point within a room.
- **Integral high performance Web server with 7.25 MB flash memory** — Features a built-in Web server with memory available for storing device drivers, GlobalViewer, and custom user Web pages.
- **Flexible mounting options** — There are a variety of optional mounting kits available for installing the MLC 104 IP Plus virtually anywhere, including walls, lecterns, or tables.
- **External universal power supply included, replacement part # 70-775-01** — Provides worldwide power compatibility.

DESCRIPTION

The Extron **MLC 104 IP Plus** MediaLink® Controller with built-in IP Link Ethernet Control is an easy-to-use control panel for any small classroom or meeting room. It is designed to control a wide range of smaller A/V systems and enables Web-based remote diagnostics, asset management, and support. The MLC 104 IP Plus standardizes the control interface for all systems, making both projector-based and switcher-based systems simple to use. Standardization also makes setup and maintenance easier to support.

The flexible MLC 104 IP Plus acts as an extended remote control panel. It is not a switcher; instead, as a controller, it tells the projector or switcher when to switch between its various inputs. Presenters with little or no training can walk into any multimedia classroom equipped with the MLC 104 IP Plus and operate the A/V system. The MLC 104 IP Plus includes universal display control for a display's power, input switching, and volume control. The MLC 104 IP Plus features backlit buttons that can be custom-labeled for easy identification. The illuminated buttons are helpful for presenters in low-light environments.

The MLC 104 IP Plus is also capable of learning IR commands for centralized control of external source devices, such as DVD players and VCRs, when used with an optional IRCM - Infrared Control Module.

The MLC 104 IP Plus is designed to work with almost every Extron switcher, including MediaLink Switchers, which are specifically designed to complement MediaLink Controllers. MediaLink Switchers are available to accommodate a variety of video, RGBHV, and audio signals while providing unique features that expand A/V system capabilities. The MLC 104 IP Plus can also work as a stand-alone device to control a display without the aid of a switcher.

Room Control

In Addition to display and source control, the MLC 104 IP Plus also offers the ability to control many other devices in the room. Room lighting, screens, projector lifts, window shades and other equipment can be controlled using the controller's three digital I/O ports.

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MLC 104 IP Plus Series

DESCRIPTION (CONTINUED)

IP Link® Ethernet Control

The MLC 104 IP Plus is equipped with Extron's IP Link, a high performance intelligent network integration solution specifically engineered to meet the needs of professional A/V environments — from small K-12 classrooms to large universities and businesses. When used with GlobalViewer, IP Link facilitates key A/V resource management functions including:

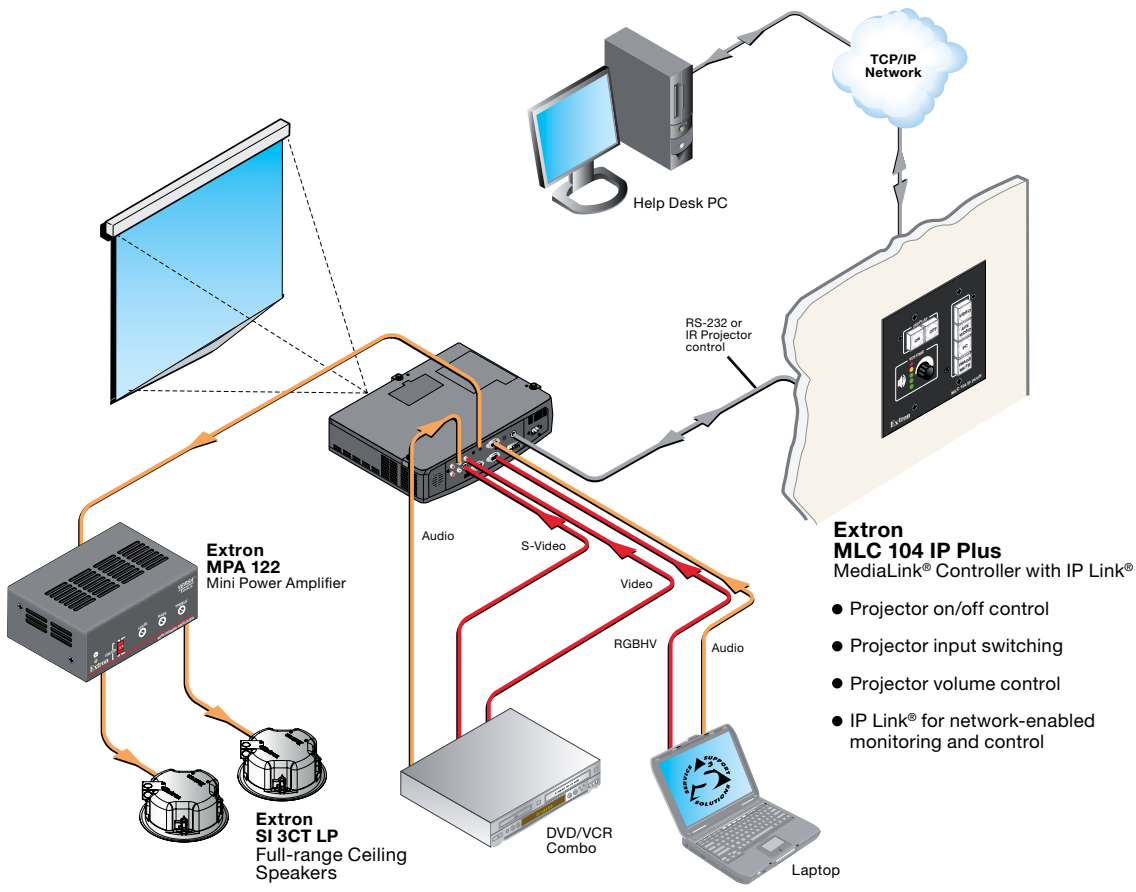
- Proactive maintenance — GlobalViewer can store and display information about connected devices like serial numbers, owner identification, maintenance history, and installed firmware versions. This centralized data can be collected and used to reduce maintenance costs and guide future purchasing decisions. For instance, a projector can be polled routinely to track lamp usage and total life time. When lamp usage reaches a predetermined number of hours, the MLC 104 IP Plus can send a report via e-mail.
- Event scheduling — GlobalViewer uses the real-time clock and calendar in IP Link-enabled devices to maximum value. User-defined tasks are easy to configure and schedule with GlobalViewer and don't require high-level programming skills. For instance, an administrator may want to turn off all projectors every Friday at close of business.
- Remote technical support — Technicians can troubleshoot systems remotely because GlobalViewer provides the real-time status of connected devices. Information such as connection status, power state, and current input selection is displayed in a central location. For many connected devices, technicians can toggle power on or off, switch sources, control volume, and more without leaving their office. Many common problems can be resolved without a trip to where the equipment is located.
- Theft alerts — IP Link-enabled products are always on and routinely poll their attached devices for status information. If any serially controlled device, such as a projector or plasma display, is physically disconnected from the network, the MLC 104 IP Plus monitoring its status will know immediately. In such an event, it can send an e-mail message notifying security personnel of the possible theft. For fast action, e-mails can be sent to multiple addresses including cell phones and wireless PDAs.

Easy System Configuration Using Global Configurator Software

The MLC 104 IP Plus can be fully configured using Extron's Global Configurator software. Extron creates and administers a wide selection of drivers for use with the MLC 104 IP Plus. Drivers enable the MLC 104 IP Plus to control basic display functions such as power, input selection, and volume adjustment. Users can customize drivers or go to the Extron Web site to download RS-232 or IR drivers compatible with the latest and most popular display and source devices.

Web-Based A/V Resource Management with Free GlobalViewer and GlobalViewer Enterprise

MLC 104 IP Plus Series Controllers support both the free GlobalViewer® Web application and GlobalViewer Enterprise software for advanced A/V resource management capabilities. GlobalViewer® Enterprise server-based software is the next step up for managing larger A/V installations. It provides an easy upgrade path for existing users of Extron's GlobalViewer Web application using configuration wizards, not programming. Compatible with most Web browsers, GlobalViewer Enterprise provides enhanced help desk functionality, enterprise-wide scheduling and monitoring, and time-stamped A/V system data collection for reporting. Built on Microsoft® .NET® technology, GlobalViewer Enterprise integrates with third-party facility scheduling software for viewing room availability and managing meeting schedules. As with Extron's free GlobalViewer Web application, no programming is required.



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Extron®

MLC 104 IP Plus

MediaLink® Controller with IP Link®

UNIQUE FEATURES

- Available with two-gang black & white, RAL9010 White, or brushed aluminum faceplates
- MR 200 Mud Ring included

MODEL	VERSION DESCRIPTION	PART #
MLC 104 IP Plus	Black & White Faceplates	60-818-03
MLC 104 IP Plus	RAL9010 White Faceplate	60-818-05
MLC 104 IP Plus	Brushed Aluminum Faceplate	60-818-04

MLC 104 IP Plus DV+

MediaLink® Controller with IP Link® and Integrated DVD and VCR IR Control

UNIQUE FEATURES

- Includes two IR emitters
- Dual-function DVD and VCR IR control
- Includes four-gang black & white faceplates
- Black and white MR 400 Mud Rings included

MODEL	VERSION DESCRIPTION	PART #
MLC 104 IP Plus DV+	Black & White Faceplates	60-818-82

MLC 104 IP Plus AAP

MediaLink® Controller with IP Link® and AAP Opening

UNIQUE FEATURES

- Four-gang faceplate
- Opening for up to four single space AAP - Architectural Adapter Plates
- MR 400 Mud Ring included

MODEL	VERSION DESCRIPTION	PART #
MLC 104 IP Plus AAP	Black Faceplate	60-818-12
MLC 104 IP Plus AAP	White Faceplate	60-818-13
MLC 104 IP Plus AAP	RAL9010 White Faceplate	60-818-15

MLC 104 IP Plus L

MediaLink® Controller with IP Link® and Lectern Faceplate

UNIQUE FEATURES

- Low profile, 3.2" (8.1 cm) tall faceplate fits into a compact space on a lectern or desk
- Mounts in a rack or wall using an Extron UCM RAAP or UCM 10X8P Universal Controller Mounting Kit; mounts on a desk using an Extron SMB 203 L Lectern Series Mount Box

MODEL	VERSION DESCRIPTION	PART #
MLC 104 IP Plus L	Black Faceplate	60-818-32
MLC 104 IP Plus L	White Faceplate	60-818-33
MLC 104 IP Plus L	RAL9010 White Faceplate	60-818-35

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MLC 104 IP Plus Series

MLC 104 IP Plus Accessories

INCLUDED ACCESSORIES	MODEL DESCRIPTION	PAGE	PART #
Backlit Button Labels	Text Button Labels	n/a	33-954-01
Backlit Button Labels	Text Button Labels	n/a	33-955-01

OPTIONAL ACCESSORIES	MODEL DESCRIPTION	PAGE	PART #
CM-9BLB	Nine-Button Control Module - Quad Space AAP	page 407	70-494-02
CFG Cable	9-pin D Female to 2.5 mm TRS Configuration Cable	page 291	70-335-01
IPA T RLY4	IP Link® Accessory with Four Relays	page 491	60-545-03
IRCM-DV+	Dual-Function DVD and VCR IR Control Module	page 406	70-220-02
IR Emitter and Shield Kit	IR Emitter Kits	page 290	70-283-01
MLC PW/RS-232/VC-6'	One Power, Switcher Communications and Volume Control Cable - Plenum	page 432	26-626-06
MLS 100 A	Four Input Stereo Audio MediaLink® Switcher	page 441	60-497-01
MLS 102 VGA	Two Input VGA and Four Input Stereo Audio MediaLink® Switcher	page 442	60-497-04
MLS 304MA	Four Input MediaLink® Switcher with Mono Audio Amplifier	page 448	60-550-01
MPA 122	22 Watt Two Channel Integrated MPA - Mini Power Amplifier	page 686	60-668-01
SCP 104	Secondary Control Panel for MLC 104 IP Plus and System 5 IP	page 283	60-672-02
UC50' (50' / 15 m)	Universal Projector Control Cable: 9-pin D Female to Bare Wires - 50' (15.2 m)	page 432	26-518-01
UCM RAAP	Universal Controller Mounting Rack Kit	page 423	70-344-02

SPECIFICATIONS

CONTROL — HOST PORTS

Serial host port ..... 1 bidirectional RS-232 front panel 2.5 mm mini stereo jack
Baud rate and protocol ..... 38400, 8 data bits, 1 stop bit, no parity
Serial control pin configurations ..... Mini stereo jack: tip = TX, ring = RX, sleeve = GND
Ethernet host port ..... 1 RJ-45 female
Ethernet data rate ..... 10/100Base-T, half/full duplex with autodetect
Ethernet protocol ..... ARP, DHCP, ICMP (ping), TCP/IP, Telnet, HTTP, SMTP
Ethernet default settings ..... Link speed and duplex level = autodetected
IP address = 192.168.254.254
Subnet mask = 255.255.0.0
Default gateway = 0.0.0.0
DHCP = off
Web server ..... Up to 200 simultaneous sessions
7.25 MB nonvolatile user memory
Secondary control panel (SCP) .. (1) 3.5 mm 5-pole direct insertion captive screw connector
Program control ..... Extron's Global Configurator for Windows®
Extron's Simple Instruction Set (SIS™)
Microsoft® Internet Explorer, Telnet
IR learning frequencies ..... 30 kHz to 62 kHz
IR learning distance ..... 2" (5.1 cm) to 12" (30.5 cm) from the top panel

CONTROL — SERIAL PORTS

Display control port ..... (1) 3.5 mm direct insertion captive screw connector, 3 pole, for bidirectional RS-232 control (± 5V)
Switcher control port ..... (1) 3.5 mm direct insertion captive screw connector, 3 pole, for bidirectional RS-232 control (±5 V)
Baud rate and protocol (RS-232) ..... 115200 to 300 baud (9600 baud = default); 8 (default) or 7 data bits; 1(default) or 2 stop bits; no parity (default), or even or odd parity

CONTROL — IR PORT

IR control port ..... (1) 3.5 mm direct insertion captive screw connector, 2 pole
TTL level (0 to 5 V) infrared control up to 1 MHz

DIGITAL I/O CONTROL

Number/type ..... 3 digital input/output (configurable)
Connector ..... (1) 3.5 mm direct insertion captive screw connector, 4 pole
Pin configuration ..... 1, 2, 3 = digital inputs/outputs 1, 2, and 3; GND = GND
Digital inputs
Input voltage range ..... 0-12 VDC
Input impedance ..... 28k ohms
Programmable pullup ..... 2k ohms to +5 VDC
Threshold low to high ..... >2.8 VDC
Threshold high to low ..... <2.0 VDC
Digital outputs ..... 250 mA sink from 24 VDC, maximum

GENERAL

External power supply ..... 100 VAC to 240 VAC, 50/60 Hz, external; to 12 VDC, 1 A, regulated
Power input requirements
MLC 104 IP Plus DV+ ..... 12 VDC, 0.305 A (includes MLC 104 IP Plus and IRCM-DV+)
All other models ..... 12 VDC, 0.285 A (0.305 A if used with an optional IRCM-DV+)
NOTE: An MLC 104 IP Plus Series controller must be powered by its own power supply. It cannot be powered by an MLS switcher.
Temperature/humidity ..... Storage: -40 to +158 °F (-40 to +70 °C) / 10% to 90%, noncondensing
Operating: +32 to +122 °F (0 to +50 °C) / 10% to 90%, noncondensing
Cooling ..... Convection, unvented
Rack mount
MLC 104 IP Plus DV+ ..... No, but wall and furniture mountable
All other models ..... Yes, with optional rack mounting kits, and also wall- and furniture-mountable with optional mounting kits
Enclosure type
MLC 104 IP Plus controller only ..... No faceplate, metal rear enclosure
MLC 104 IP Plus, MLC 104 IP Plus DV+ ..... High-impact plastic faceplate, metal rear enclosure
MLC 104 IP Plus in RAL9010, MLC 104 IP Plus AAP, MLC 104 IP Plus L ..... Metal faceplate, metal rear enclosure
Enclosure dimensions
MLC 104 IP Plus faceplate ..... 4.5" H x 4.6" W x 0.1" D (11.4 cm H x 11.7 cm W x 0.3 cm D) (2 gang)
MLC 104 IP Plus AAP and MLC 104 IP Plus DV+ faceplates ..... 4.5" H x 8.2" W x 0.1" D (11.4 cm H x 20.9 cm W x 0.3 cm D) (4 gang)
MLC 104 IP Plus L faceplate ..... 3.15" H x 6.5" W x 0.1" D (8.0 cm H x 16.5 cm W x 0.3 cm D)
MLC 104 IP Plus DV+ device ..... 2.7" H x 3.4" W x 1.8" D (6.9 cm H x 8.6 cm W x 4.6 cm D) and 2.7" H x 2.6" W x 0.9" D (6.9 cm H x 6.6 cm W x 2.3 cm D)
(Depth excludes knobs and buttons. Fits some 4 gang wall boxes. Allow at least 1.9" [4.8 cm] depth in the wall or furniture.)
All other models' device ..... 2.7" H x 3.4" W x 1.8" D (6.9 cm H x 8.6 cm W x 4.6 cm D)
(Depth excludes knob and buttons. Fits some 2 gang boxes. Allow at least 1.9" [4.8cm] depth in the wall or furniture.)

Product weight
MLC 104 IP Plus DV+ ..... 2.1 lbs (1.0 kg)
All other models ..... 1.9 lbs (0.9 kg)
Shipping weight ..... 6 lbs (3 kg)
Vibration ..... ISTA 1A in carton (International Safe Transit Association)
Regulatory compliance
Safety ..... CE, C-tick, CUL, UL
EMI/EMC ..... CE, C-tick, FCC Class A, VCCI, ICES
Accessibility ..... Complies with the appropriate requirements of Section 508 of the Rehabilitation Act (29U.S.C.794d).
MTBF ..... 30,000 hours
Warranty ..... 3 years parts and labor
NOTE: All nominal levels are at ±10%.
NOTE: Specifications are subject to change without notice.

Note: For complete specifications, please go to www.extron.com

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